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Technology Center 2100

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/087,224
Filing Date: March 01, 2002
Appellant(s): KUMAR ET AL.

Robert C. Kowert
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/30/2006 and 9/18/2006 appealing from

the Office action mailed 4/5/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2002/0165961   Everdell   11-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-26 rejected under 35 U.S.C. 102(e) as being anticipated by Everdell et

al., (US PG Pub. No. 2002/0165961).

Regarding claim 1, Everdell teaches a system, comprising:

- a first node of a distributed store comprising a primary state of session data

    configured for access by a plurality of application servers, wherein the session

    data comprises a plurality of attributes (Everdell, [0121], [0125], in which

discloses that a configuration relational database within each network device and

an NMS relational database external the network device.

The NMSs are used to configure and management multiple heterogeneous

and/or homogeneous network devices. To configure a network device, the

network administrator may connect a cable to a port of a network device and

then use the NMS to provision these as well; In term of session data attributes,

the NMS server retrieves metadata from class table (Fig. 11w, element NMS

database 1020). The metadata includes a list of simple attributes including host

address, port address etc.. are used for the connection (Everdell, [0347],

[0350]).).

- another node comprising a back-up instance of the primary state (Everdell

  discloses that the network device may include a backup configuration database

  42' maintained by a separate, backup centralized processor card. Any changes

  to configuration database 42 are replicated to backup configuration database 42'

  (Everdell, [0128]). Therefore, Everdell does discloses another node comprising a

  backup instance of the primary state of the session data);

wherein the system is configured to:

- compare the primary state to a benchmark of the primary state to generate a

  subset of the attributes of the session data that have been modified in the

  primary state (Everdell discloses that the network device keep track of important

  statistics including average client/server response times and response times to

  each network device. By looking at these statistics the network administrator tune

the NMS to provide better overall management service.(Everdell,

[0134]). And the code generation system provides data consistency across

processes, centralized tuning and an abstraction of embedded configuration and

NMS database (Everdell, [0166]));

and

- synchronize the back-up instance of the primary state with the

  primary state using the subset of the attributes of the session data (Everdell

  discloses that the maintaining a primary or master repository of data within each

  network device ensure that the NMS and network device are always

  synchronized with respect to the state of the configuration. Replicating changes

  made to the primary database within the network device to any secondary data

  repositories, for example, NMS database, ensure that all secondary data sources

  are quickly updated and remain in lockstep synchronization. Moreover, data from

  the master embedded database can be uploaded daily or hourly (Everdell,

  [0126], [0127]).

Regarding claim 2, Everdell further discloses a system as recited in claim 1,

wherein, to compare the primary state to the benchmark of the primary state, the

system is further configured to perform binary differencing of a binary representation of

the primary state and a binary representation of the benchmark of the primary state to

determine the modified attributes (Everdell, [0566],in which the comparison of the

connection table (connected/disconnected) corresponds to the binary differencing of

binary representation).

Regarding claim 3, Everdell further discloses a system as recited in claim 2,

wherein, to perform binary differencing, one or more portions of the binary

representation of the primary state are compared to corresponding portions of the

binary representation of the benchmark of the primary state to determine the modified

attributes (Everdell, [0566], compare of the ATM connection table and device driver

connection table and updates the ATM table since ATM application is a distributed

application corresponds to the benchmark and primary attributes)

Regarding claim 4, Everdell further discloses a system as recited in claim 1,

wherein, to compare the primary state to a benchmark of the primary state, the system

is further configured to perform object graph differencing of an object graph

representation of the primary state and an object graph representation of the

benchmark of the primary state to determine the modified attributes (Everdell, [0355], in

which the NMS server sent to NMS client corresponds to the primary state is performed

in object graph presentation, also, [0918], in which the threshold evaluation for resource

attribute, and hardware resource corresponds to the comparison of primary and

benchmark attribute in the object graph differencing form.)

Regarding claim 5, Everdell further discloses the system as recited in claim 4,

wherein the attributes comprise objects organized according to an object graph

representation, wherein, to perform object graph differencing, one or more objects in the

object graph representation of the primary state are compared to corresponding

instances of objects in an object graph representation of the benchmark of the primary

state to identify the modified attributes of the primary state (Everdell, [0918]-[0919],

[0924], in which the threshold dialog box includes many elements and user may accept

the default value or select value from corresponding menus, NMS client may add new

rules to pull-down menu corresponds to the compare and modify attributes of primary

state).

Regarding claim 6, Everdell further discloses a system as recited in claim 1,

wherein the another node comprising a back-up instance of the primary state is another

node of the distributed store (Everdell, [0457], and [0462], in which the second

connection (back-up link) which derived from the first provisioning corresponds to the

another node of the distributed store).

Regarding claim 7, claiming for the system in addition with mutable attributes of

the session data (Everdell, [0202], [0489], 1.9-15, [0552], in which the changes of

configuration parameter and evaluation parameter corresponds to the mutable attributes

of the session data) has similar limitation as claim 1. Therefore, Claim 7 is rejected for

the same reasons set forth in the rejection of claim 1.

Regarding claims 8-10 have similar limitation as claims 2-4. Therefore, Claims 8-

10 are rejected for the same reasons set forth in the rejection of claims 2-4.

Regarding claim 11, claiming for the system with another instance of primary

state using means of function (Everdell discloses that the maintaining a primary or

master repository of data within each network device ensure that the NMS and network

device are always synchronized with respect to the state of the configuration.

Replicating changes made to the primary database within the network device to any

secondary data repositories, for example, NMS database, ensure that all secondary

data sources are quickly updated and remain in lockstep synchronization. Moreover,

data from the master embedded database can be uploaded daily or hourly (Everdell,

[0126], [0127) has similar limitation as claim 1. Therefore, Claim 11 is rejected for the

same reasons set forth in the rejection of claim 1.

Regarding claims 12-14 have similar limitation as claims 2-4. Therefore, Claims

12-14 are rejected for the same reasons set forth in the rejection of claims 2-4.

Regarding claims 15-20 have similar limitation as claims 1-6. Therefore, Claims

15-20 are rejected for the same reasons set forth in the rejection of claims 1-6.

Regarding claims 21-26 have similar limitation as claims 1-6. Therefore, Claims

15-20 are rejected for the same reasons set forth in the rejection of claims 1-6.

(10) Response to Argument

Issue 1: Appellant argues that Everdell fails to disclose a first node of a distributed

store comprising a primary state of session data configured for access by a plurality of

application servers, wherein the session data comprises a plurality of attributes.

Everdell, however, does disclose this claim limitation.

First, referring to the specification, there is no explicit definition of primary state

that has a limiting effect on the claims. However, in the specification, paragraph [0004],

Appellant states "Primary state 112 may include an instance of the session data that is

globally accessible by the application servers." As such, the broadest reasonable

interpretation of "Primary state" appears to be an instance of session data, where the

primary state that is specifically referred to in the specification and in the instant claim is

accessible by the application servers.

Appellant states that "a network connection is not the same as a session, as is

well known by anyone of skill in the art to which the present invention pertains." It is

noted, though, that Appellant does not state what is the distinction between the terms

"connection" and "session" from the perspective of a person of ordinary skill in the

networking art, or even what either of these two individual terms actually mean from the

perspective of a person of ordinary skill in the networking art. Referring to the

specification, applicant indicates in paragraph [0002] that "a session may include a

series of user-application interactions that may be tracked by one or more servers."

This does not constitute an explicit definition of the term "session," but it does provide

some insight into what a session is. The broadest reasonable interpretation of the term

"session" from the perspective of a person of ordinary skill in the networking art in light

of this cited portion of the specification appears to be that a session is the series of

interactions that occur from the initiation of a network connection to the termination of

the connection. As for the term "connection," referring to the specification of Everdell,

paragraph [0146], Everdell states "in addition to providing a password and standard

user credentials during the initial connection..." In the same paragraph, Everdell also

states "The connection may be established through RMI or another connection-oriented

protocol..." In paragraph [0323], Everdell states that "the NMS uses the IP address and

port numbers stored in the team session file or cookie to connect to the appropriate

NMS server." As the session file's stored information is used to establish a connection to the appropriate NMS server, the distinction between session and connection is further blurred, and does appear to by interchangeable within the disclosure of Everdell, where Everdell's connection does apparently refer to a session for transferring information, where the connection is terminated when the series of interactions that are required for the transfer of the information is completed.

Appellant also states that "Network configuration data, as in Everdell, is not session data." Once again, referring to Appellant's specification, there is no explicit definition of the term "session data" that has a limiting effect on the claims. However, in paragraph [0003] of the specification, Appellant states, "For example, session data may include a snapshot of a session between a web browser and a web server may include one or more of the state of the web browser process(es), the state of the computing system hosting the web browser, the state of the web server process(es), the state of the computing system hosting the web server, the state of the computing system hosting an application server providing content to the web server, the state of the application server process(es), and the state of one or more applications, processes and/or threads hosted by the application server or optionally any other system involved in the distributed session." It is noted that the absolute closest the specification comes to defining the term "state" is in paragraph [0004], where Appellant states "The client state may serve as interfaces between clients, application servers, and the primary state, and may provide read and/or write access to the primary state to the application server." In light of the specification, the broadest reasonable interpretation of the term

"state" appears to be any information associated with a system that describes the at least part of the current configuration of the system. In light of this interpretation, session data appears to be any information associated with a web browser process(es), computing system hosting the web browser, the web server process(es), the computing system hosting the web server, the computing system hosting an application server providing content to the web server, the application server process(es), or one or more applications, processes and/or threads hosted by the application server or optionally any other system involved in the distributed session.

In light of these interpretations, which are the broadest reasonable interpretation of a person of ordinary skill in the networking art in light of Appellant's specification, it is apparent that Everdell does disclose each limitation required for claim 1.

Everdell discloses a first node of a distributed store comprising a primary state of session data configured for access by a plurality of application servers, wherein the session data comprises a plurality of attributes. In light of the above definitions of session data and Primary State, Appellant only requires that a first node of a distributed store comprises an instance of information associated with any one of a web browser process(es), computing system hosting the web browser, the web server process(es), the computing system hosting the web server, the computing system hosting an application server providing content to the web server, the application server process(es), or one or more applications, processes and/or threads hosted by the application server or optionally any other system involved in the distributed session, wherein the information comprises a plurality of attributes. The Office Action dated

6/1/2006 indicated that Everdell discloses this in Figure 11w as element NMS database 1020, and that the metadata, which is discussed in paragraphs [0347] and [0350], which is stored in the element NMS database, includes a list of simple attributes including host address, port address, SNMP retry value, SNMP timeout value, a database port address, and simple attributes corresponding to passwords for each of the possible group access levels, for example, an administrative password, a provisioner password, and a viewer password. The metadata, therefore, clearly falls in the scope of the term "primary state," as it includes an instance of information associated with the computing system hosting the web server, the computing system hosting the web browser, or the computing system hosting the application server, and the metadata clearly includes a plurality of attributes pertaining to at least one of these three elements selected from the list of elements.

Issue 2: Appellant argues that Everdell fails to disclose another node comprising a backup instance of the primary state.

However, applicant relies on the incorrect assumption that Everdell does not include the first instance of a primary state required by the claim, which as established above, Everdell does. Therefore, as indicated previously, Everdell discloses that the network device may include a backup configuration database maintained by a separate, backup centralized processor card in paragraph [0128].

Issue 3: Appellant argues that Everdell fails to disclose comparing the primary state to

a benchmark of the primary state to generate a subset of the attributes of the session

data that have been modified in the primary state.

First, as previously asserted, Everdell discloses that the network device keep

track of important statistics including average client/server response times and

response times to each network device. By looking at these statistics the network

administrator tune the NMS to provide better overall management service.(Everdell,

[0134]). And the code generation system provides data consistency across processes,

centralized tuning and an abstraction of embedded configuration and NMS database

(Everdell, [0166]). Therefore, Everdell discloses comparing the primary state to a

statistic performance data and the code generation system generated the tuning code of

embedded configuration of the primary state.

Second, referring to the specification, there appears to be no explicit or implicit

definition of the term "benchmark." It appears that the term "benchmark" refers to a

state of the information contained within the primary state, which may the previous

primary state that was stored. Therefore, even if paragraph [0166] did not disclose the

required functionality, paragraph [0128] of Everdell does disclose that any changes to

the configuration database are written to the backup configuration database. A person

of ordinary skill in the networking art would recognize that the changes are detected by

comparing the current state of the information to the previous state, which would

constitute comparing the primary state to a benchmark of the primary state.

Issue 4: Appellant argues that Everdell fails to disclose synchronizing the back-up instance of the primary state with the primary state using the subset of attributes of the session data.

However, Everdell does disclose synchronizing the back-up instance of the primary state with the primary state using the subset of attributes of the session data. For example, in paragraph [0128], Everdell discloses that changes are written into the backup of the configuration database.

Issue 5: Appellant argues that Everdell fails to disclose that to compare the primary state to the benchmark of the primary state, the system is further configured to perform binary differencing of a binary representation of the primary state and a binary representation of the benchmark of the primary state to determine the modified attributes.

First, it is noted that the specification lacks an explicit definition that has a limiting effect on the claim for the term "binary differencing." However, in paragraph [0010], Appellant states, "Binary differencing may include comparing one or more portions of the binary representation of the primary state to corresponding portions of the binary representation of the benchmark of the primary state to determine the modified attributes." It is first noted that in computing devices, all parameters are stored using a binary representation. Therefore, the broadest reasonable interpretation of binary differencing from the perspective of a person of ordinary skill in the networking art in light of the specification is the comparison of at least one bit of a first piece of

information to corresponding portions of a second piece of information to determine the differences. Thus, as in computing devices, all parameters are stored using a binary representation, any comparison of information would constitute "binary differencing" when the comparisons are performed by some computing device.

Accordingly, as previously asserted by Examiner, Everdell paragraph [0566] discloses this functionality. Additionally, the comparison that must be performed by Everdell to determine new parameters in paragraphs [0126]-[0128] also constitutes "binary differencing."

Issue 6: Appellant argues that Everdell does not disclose that, to perform said binary differencing, one or more portions of the binary representation of the primary state are compared to corresponding portions of the binary representation of the benchmark of the primary state to determine the modified attributes.

First, it is unclear, when the claims are read in light of the specification, how this claim is significantly different than the subject matter found within claim 2, as the broadest reasonable interpretation of binary differencing from the perspective of a person of ordinary skill in the networking art in light of the specification is the comparison of at least one bit of a first piece of information to corresponding portions of a second piece of information to determine the differences, considering that the difference between claim 2 and claim 3 is that the comparison is of corresponding portions of the two states. Therefore, the arguments provided in issue 5 apply equally for this argument.

Issue 7: Appellant argues that Everdell fails to disclose that, to compare the primary

state to a benchmark of the primary state, the system is further configured to perform

object graph differencing of an object graph representation of the primary state and an

object graph representation of the primary state to determine the modified attributes.

First, it is unclear what the definition of "object graph" that Appellant is relying on

is. There appears to be no explicit definition of "object graph" in the specification. The

closest Appellant comes to defining this term occurs in paragraph [0011], where

Appellant states, "Object graph differencing may include comparing the structure of a

directed graph representing the objects of the primary state to the structure of a directed

graph representing the objects of the benchmark of the primary state..." For the

definition of "directed graph," there is no explicit or implicit definition for this term.

Further, the figure that is provided to explain what "object graph differencing" entails is

Figure 7, where the figure only shows that "object graph differencing" is performed

(800), then the data is synchronized (802).

Lacking any sort of definition for an "object graph" or a "directed graph," the

broadest reasonable of the term "object graph" appears to be any graphical display of

objects. Further, the term representation is utilized with these items. The term "object

graph representation" is not the object graph itself, but a representation of the object

graph. As the data that is within the graph itself can be considered to be a

representation of the graph from the perspective of a person of ordinary skill in the

networking art, especially considering that a graph may simply be stored in a memory

by storing the binary representation of the data that is to be plotted in the graph (a graph, in its displayed form, cannot be directly stored in memory. Only a binary representation of some sort of the graph may be stored, where the only other options include a specific graph file format or an image format of some sort), then generate the graph each time the graph is to be viewed.

Accordingly, performing binary differencing of the information that is represented within the graph is similar to performing a comparison of the representation of the object graphs. Therefore, the arguments presented for issues 5 and 6 apply equally well to the issues raised in issue 7.

Issue 8: Appellant argues that Everdell fails to disclose that the attributes comprise objects organized according to an object graph representation, wherein, to perform object graph representation, one or more objects in the object graph representation of the primary state are compared to corresponding instances of objects in an object graph representation of the benchmark of the primary state to identify the modified attributes of the primary state.

The arguments presented in issues 5-7 apply equally to this issue. Also, it is noted that to compare information to determine changes that occurred between a benchmark and current data, corresponding portions must be compared, especially when the claims are read in light of the specification.

Issue 9: With regard to claim 6, Appellant argues that Everdell fails to disclose that the another node comprises a back-up instance is another node of the distributed store.

First, there is no explicit definition in the specification for the term "distributed store." Appellant, though, in paragraph [0028] does state, "In one embodiment, distributed store 110 may include storage on one or more computer systems that also host one or more application servers." Therefore, it appears that a distributed store is simply storage provided on one or more computer systems. As such, claim 6 requires simply a second back-up node, making the total number of nodes in the distributed store three, one primary node, and two back-up nodes.

However, in paragraph [0425], Everdell discloses that a 1:N configuration may be utilized, where one line card is backed up, at least in part, on multiple line cards. This would meet the claim limitation as there would be one primary and at least two back-up nodes.

Issue 10: With regard to claim 7, Appellant argues that Everdell does not disclose a system configured to generate a set of the plurality of attributes that are mutable attributes for use in synchronizing.

First, the term mutable, as evidenced in the specification in paragraph [0056], may be a writeable attribute. Therefore, the broadest reasonable interpretation of the term "mutable" in light of the specification from the perspective of a person of ordinary skill in the networking art would be "changeable."

It is also noted that there is a difference between being mutable, as in claim 7, and being marked or classified as being mutable, as in the specification. Being marked or classified as mutable implies that the attributes have some sort of parameter or marker associated with them that designates them as attributes that can be changed, while the claim only requires that a set of attributes that are mutable attributes are generated, which, of course, does not have a requirement that all the mutable attributes are part of the generated set.

Accordingly, Appellant is correct that claim 7 recites different limitations than claim 1, as claim 7 is broader in scope. Where claim 1 requires that system generates a subset of the attributes of the session data that have been modified, while claim 7 generates a set of the plurality of attributes that are changeable (but not necessarily changed.). The rejection of claim 1, therefore, applies to claim 7, as if the attributes are changed, clearly they are changeable, and thus mutable, making the subset of changed attributes of claim 1 within the scope of a set of mutable attributes. The discussion of claim 1, which can be found in issues 1-4, and will not be repeated here.

Issue 11: With regards to claim 8, Appellant argues that Everdell fails to disclose that the system is further configured to compare the set of mutable attributes to a benchmark of the primary state to determine a subset of the attributes of the session data that have been modified in the primary state.

The difference between claim 7 and claim 1 was that claim 1 created a subset of changed attributes, where claim 7 created a set of mutable attributes. Claim 8, which

depends from claim 7, now generates a set of changed attributes, which makes the

scope of claim 8 similar to the scope of claim 1. As such, the arguments provided in

issues 1-4 apply to this issue as well.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the

Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.
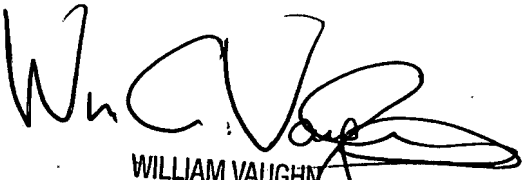
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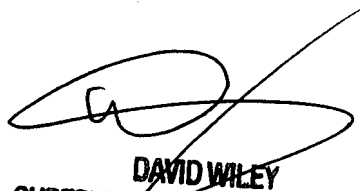
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